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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/664,822	09/16/2003	Javit A. Drake	08935-297001 / M-5031	3431
26161	7590	08/14/2008	EXAMINER	
FISH & RICHARDSON PC P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022			HODGE, ROBERT W	
		ART UNIT	PAPER NUMBER	
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/664,822	DRAKE ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	ROBERT HODGE	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 01 August 2008.  
 2a) This action is **FINAL**.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-39 is/are pending in the application.  
 4a) Of the above claim(s) 34-39 is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-33 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date _____.	6) <input type="checkbox"/> Other: _____ .

## DETAILED ACTION

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/1/08 has been entered.

### ***Response to Arguments***

Applicant's arguments filed 8/1/08 have been fully considered but they are not persuasive. Regarding claim 1, applicants state that Hockaday does not teach a fuel egress port connected to the housing. It is quite clear in at least figure 1, that the exit port (i.e. fuel egress port) which is a pipe provides fluid communication from the interior of the housing 7 to the exterior of the housing 7 and therefore the exit port must and is in fact connected to the housing. Applicants state that Hockaday does not teach a membrane that is in the housing. It is also quite clear from at least figure 1, that the selectively permeable membrane 2 is in the housing 7. Regarding claim 2, applicants state that Hockaday does not teach a polymer membrane disposed about a substantial portion of an interior of the housing. As seen in figure 2, Hockaday teaches two selectively permeable mechanisms 8 and 12 (i.e. membranes) which can comprise silicone rubber which as clarified in the Final Office Action 3/4/08 is a polymer and

because the membranes exist inside of the housing 7 and occupy a substantial portion of the interior space of the housing 7, Hockaday reads on claim 2 as recited. Regarding claim 10, applicants are reciting a functional limitation of the membrane, applicants are not claiming a method and are instead claiming an apparatus and are therefore directed to MPEP 2114:

**2114 [R-1] Apparatus and Article Claims — Functional Language**

For a discussion of case law which provides guidance in interpreting the functional portion of means-plus-function limitations see MPEP § 2181 - § 2186.

**APPARATUS CLAIMS MUST BE STRUCTUR-ALLY DISTINGUISHABLE FROM THE PRIOR ART**

>While features of an apparatus may be recited either structurally or functionally, claims< directed to >an< apparatus must be distinguished from the prior art in terms of structure rather than function. >*In re Schreiber*, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997) (The absence of a disclosure in a prior art reference relating to function did not defeat the Board's finding of anticipation of claimed apparatus because the limitations at issue were found to be inherent in the prior art reference); see also *In re Swinehart*, 439 F.2d 210, 212-13, 169 USPQ 226, 228-29 (CCPA 1971);< *In re Danly*, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). “[A]pparatus claims cover what a device *is*, not what a device *doesHewlett-Packard Co. v. Bausch & Lomb Inc.*, 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990) (emphasis in original).

**MANNER OF OPERATING THE DEVICE DOES NOT DIFFERENTIATE APPARATUS CLAIM FROM THE PRIOR ART**

A claim containing a “recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus” if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987) (The preamble of claim 1 recited that the apparatus was “for mixing flowing developer material” and the body of the claim recited “means for mixing ..., said mixing means being stationary and completely submerged in the developer material”. The claim was rejected over a reference which taught all the structural limitations of the claim for the intended use of mixing flowing developer. However, the mixer was only partially submerged in the developer material. The Board held that the amount of submersion is immaterial to the structure of the mixer and thus the claim was properly rejected.).

It has already been submitted in the Final Office Action dated 3/4/08 that Hockaday is fully capable of performing the same function as the instant invention and the burden has been shifted to applicants to prove in the form of evidence otherwise. Regarding claims 3 and 11 it is quite clear that the secondary reference to Kaschemekat teaches a multi-layer composite membrane, which will be reiterated in the rejection below, as far as the functional limitation goes, see MPEP 2114 above. Furthermore regarding claim 11 it is also quite clear that Kaschemekat teaches a coating that is selectively permeable on a surface of the substrate and Hockaday already teaches a methanol-impermeable coating which will be reiterated in the rejection below. Regarding claim 4, it is quite clear that Solie teaches folding membranes into predetermined shapes which will be reiterated in the rejection below. Regarding the double patenting rejections it is still submitted that the instant application fully encompasses the scope of the copending applications (i.e. the instant application is broader and the copending applications are

further limited in scope) and therefore the rejections will be maintained. For the reasons already established above and as previously presented throughout the prosecution history of this application the prior art rejections will be maintained.

***Claim Rejections - 35 USC § 102***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 2 and 5-10 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,645,651 hereinafter Hockaday.

Hockaday teaches a fuel cartridge comprising a housing 7 with a fuel egress 4 (i.e. exit port) supported by and connected to the housing and a selectively permeable membrane (2, 8 and 12) in the housing 7 (figures 1 and 2, column 3, lines 55-64, column 5, line 1 – column 6, line 59, column 7, lines 49-50 and column 8, line 24 – column 9, line 40). Hockaday further incorporates the fuel Ampoule of the commonly assigned U.S. Pre-Grant Publication No. 2001/0049045 by reference and that U.S. Patent No. 6,645,651 is an improvement upon said fuel ampoule by adding an additional fuel source inside of a fuel cartridge to the previously known fuel ampoule, the previous fuel ampoule of U.S. Pre-Grant Publication No. 2001/0049045 is disclosed as having the following structure; a multilayer composite vaporization membrane 8 and 12, having a cylindrical shape (figures 1 and 3), disposed about a substantial portion of an interior of the housing, that has a selective permeability to allow vaporization of liquid methanol (paragraph [0052]) (i.e. as recited in claim 5) said cartridge also containing a

carbonaceous compound (paragraph [0023]), said membrane comprising silicone or silicone impregnated into fiberglass cloth or polyester film, said membrane further comprising a porous substrate made of polyurethane (paragraph [0050]) (see also paragraphs [0014]-[0056]).

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 3, 11-20, 22-30, 32 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hockaday in view of U.S. Patent No. 5,069,793 hereinafter Kaschemekat.

Hockaday as discussed above is incorporated herein and U.S. Pre-Grant Publication No. 2001/0049045 further teaches the use of methanol-impermeable coatings on housing walls (paragraph [0041]).

Hockaday does not teach that the composite membrane has a coating of a methanol-impermeable material on one surface.

Kaschemekat teaches a spirally wound multi layer composite membrane comprising a porous substrate (i.e. web), a membrane disposed on a first surface of the substrate (i.e. microporous substrate membrane) and a coating that is a permselective polymer on the other surface of the substrate and said multi layer composite membrane can be a plurality of membranes (column 1, lines 11-52, column 10, lines 33-64 and

example 1). Kaschemekat further teaches that different polymers can be chosen for their specific selectivity.

At the time of the invention it would have been obvious to one having ordinary skill in the art to form a multi layer composite membrane having a porous substrate with a membrane on one side and a methanol-impermeable coating on the opposite surface and then spirally wind said multi layer composite membrane in Hockaday as taught by Kaschemekat, in order to provide a fuel cartridge that will have a higher capacity for methanol storage and improved safety by limiting the amount of methanol that can be leaked out of the container if it should be punctured while at the same time allowing the right amount of fuel through the fuel egress for supply to a fuel cell. It would have also been obvious to provide multiple multi layer composite membrane in Hockaday as taught by Kaschemekat to further increase the capacity for methanol storage and improved safety of the fuel cartridge and also because it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. St. Regis Paper Co. v. Bemis Co., 193 USPQ 8. It would have also been obvious to use polyurethane for the membrane in Hockaday as taught by Kaschemekat in order to provide a membrane that is properly selected for its specific chemical selectivity and also since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hockaday in view of U.S. Patent No. 5,681,467 hereinafter Solie.

Hockaday as discussed above is incorporated herein.

Hockaday does not teach that the membrane has a series of folds.

Solie teaches spirally wound membrane filters that is folded into predetermined shapes dependent upon the application (figures 1 and 2 and column 3, lines 15-55).

At the time of the invention it would have been obvious to one having ordinary skill in the art to include folding the membrane of Hockaday as taught by Solie, in order to increase the overall surface area of the membrane to allow more methanol to be released and supplied to the fuel cell.

Claims 21 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hockaday in view of Kaschemekat as applied to claims 11 and 24 above, and further in view of U.S. Patent No. 6,207,369 hereinafter Wohlstadter.

Hockaday as modified by Kaschemekat does not teach that the membrane is a sintered metal coated with a polymer.

Wohlstadter teaches that filters may comprise sintered metals coated with polymer membranes (column 70, line 66 – column 71, line 4).

At the time of the invention it would have been obvious to one having ordinary skill in the art to include a sintered metal coated with a polymer as the membrane for Hockaday as modified by Kaschemekat as taught by Wohlstadter in order to increase the overall rigidity of the fuel cartridge thus making it more durable and also since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice.

In re Leshin, 125 USPQ 416.

***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-8, 10 provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-6, 8 and 12 of copending Application No. 10/664,405. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of the instant invention fully encompass the scope of the claims in copending Application No. 10/664,405; the only difference is the claims in copending Application No. 10/664,405 further limit the structure by adding either a heating element or a bladder and piston arrangement.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 1-3, 5-8 and 10 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 2, 6-9, 11 and 12 of copending Application No. 10/664,818. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of both applications just use different words to claim the same thing.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT HODGE whose telephone number is (571)272-2097. The examiner can normally be reached on 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Robert Hodge/  
Examiner, Art Unit 1795